WHAT IS CLAIMED IS:

1 A composition for forming a microporous ceramic material comprising:

a metal silicon powder, and at least one nonoxide ceramic powder selected from the group consisting of a silicon nitride powder and a silicon carbide powder,

wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder is 5 parts or more and less than 60 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio.

2. The composition according to claim 1, wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder is 25 parts or more and less than 45 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio.

3. The composition according to claim 1, wherein an average particle size of the metal silicon powder and the nonoxide ceramic powder is in a range from 1 μm or more and less than 50 μm.

4. The composition according to claim 1, comprising a dispersion medium that disperses the metal silicon powder and the nonoxide ceramic powder.

5. A composition for forming a microporous ceramic material comprising:

a metal silicon powder, at least one nonoxide ceramic powder selected from the group consisting of a silicon nitride powder and a silicon carbide powder, and at least one oxide powder selected from the group consisting of a yttrium oxide powder and an aluminum oxide powder,

wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder is 10 parts or more and less than 100 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio, and

the content of the oxide powder is an amount corresponding to 2 mass % or more and less than 250 mass% of the content of th metal silicon powder and not more

than 20 mass% of the total amount of the metal silicon powder, the nonoxide ceramic powder and the oxide powder.

6. The composition according to claim 5, wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder is 20 parts or more and less than 90 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio.

7. The composition according to claim 5, wherein an average particle size of each of the metal silicon powder and the nonoxide ceramic powder is in a range from 1 μm or more and less than 50 μm.

8. The composition according to claim 5, wherein an average particle size of the oxide powder is in a range from 0.1 μm or more and less than 1 μm.

9. The composition according to claim 5, comprising a dispersion medium that disperses the metal silicon powder, the nonoxide ceramic powder and the oxide powder.

10. A method for making a microporous ceramic material comprising:

preparing a composition comprising a metal silicon powder, and at least one nonoxide ceramic powder selected from the group consisting of a silicon nitride powder and a silicon carbide powder, wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder is 5 parts or more and less than 60 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio,

molding the composition into a molded product having a predetermined shape, and

subjecting the molded product to reaction sintering in an atmosphere that allows nitriding.

11. The method according to claim 10, wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder in the composition is 25 parts or more and

less than 45 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio.

12. The method according to claim 10, wherein an average particle size of each of the metal silicon powder and the nonoxide ceramic powder contained in the composition is in a range from 1 μm or more and less than 50 μm.

13. The method according to claim 10, wherein the composition is molded under pressure at a molding pressure set in a range from 30 MPa or more and less than 200 MPa in the molding process.

14. A method for making a microporous ceramic material comprising:

preparing a composition comprising a metal silicon powder, at least one nonoxide ceramic powder selected from the group consisting of a silicon nitride powder and a silicon carbide powder, and at least one oxide powder selected from the group consisting of a yttrium oxide powder and an aluminum oxide powder, wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder is 10 parts or more and less than 100 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio, and the content of the oxide powder is an amount corresponding to 2 mass % or more and less than 250 mass% of the content of the metal silicon powder and not more than 20 mass% of the total amount of the metal silicon powder, the nonoxide ceramic powder and the oxide powder,

molding the composition into a molded product having a predetermined shape, and

subjecting the molded product to reaction sintering in an atmosphere that allows nitriding.

15. The method according to claim 14, wherein a mixing ratio of the metal silicon powder and the nonoxide ceramic powder in the composition is 20 parts or more and less than 90 parts of the metal silicon powder with respect to 100 parts of the nonoxide ceramic powder in a mass ratio.

16. The method according to claim 14, wherein an average particle size of each of the metal silicon powder and the nonoxide ceramic powder contained in the composition is in a range from 1 μm or more and less than 50 μm.

17. The method according to claim 14, wherein an average particle size of the oxide ceramic powder contained in the composition is in a range from 0.1 μm or more and less than 1 μm.

18. The method according to claim 14, wherein the composition is molded under pressure at a molding pressure set in a range from 30 MPa or more and less than 200 MPa in the molding process.

19. A microporous ceramic material made by the method according to claim 10.

20. A microporous ceramic material made by the method according to claim 14.